

IN THE CLAIMS

Please replace the claims as filed with the claims set forth below. This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A composition comprising a genetically engineered polypeptide expressed in a heterologous host cell, said polypeptide having cellulase activity and having a sequence of at least 90% identity to SEQ ID NO: 1, wherein said polypeptide was expressed in a heterologous host cell.
2. (Previously presented) The composition of claim 1 wherein the polypeptide comprises a catalytic domain of a glycosyl hydrolase family 74 (GH74_Ace) enzyme defined as including the polypeptide sequence of SEQ ID NO: 3, a carbohydrate binding domain (CBD) III, a linker, and a signal sequence.
3. (Cancelled).
4. (Currently amended) The composition of claim 2, wherein the carbohydrate binding domain (CBD []) III of the polypeptide is further defined as comprising a length of about 80 to about 150 amino acids.
5. (Currently amended) The composition of claim 2 wherein the carbohydrate binding domain (CBD []) III of the polypeptide is further defined as comprising a length of about 90 amino acids.
6. (Cancelled).
7. (Currently amended) The composition of claim 2 wherein the carbohydrate binding domain (CBD []) III is further defined as comprising the polypeptide sequence of SEQ ID NO: 4.

8. (Currently amended) The composition of claim 2 wherein the ~~carbohydrate-binding domain~~ (CBD [I]) III is further defined as comprising the polypeptide sequence of SEQ ID NO: 5.
9. (Currently amended) The composition of claim 2 wherein said polypeptide comprises sequences ~~identical to the polypeptides~~ of SEQ ID NO: 3 and SEQ ID NO: 4.
- 10-11. (Cancelled).
12. (Currently amended) A genetically engineered polypeptide ~~expressed in a heterologous host cell~~, said polypeptide having a sequence of at least 90% identity to SEQ ID NO:1, wherein said polypeptide was expressed in a heterologous cell.
13. (Cancelled).
14. (Previously presented) An industrial mixture suitable for degrading cellulose, such mixture comprising the polypeptide of claim 1.
15. (Currently amended) The industrial mixture of claim 14 further ~~defined as~~ comprising a detergent.
- 16-27. (Cancelled)
28. (Currently amended) A composition comprising a genetically engineered polypeptide ~~expressed in a heterologous host cell~~, said polypeptide having a at least 90% identity to the polypeptide sequence of SEQ ID NO: 3, said polypeptide having catalytic activity of a glycosyl hydrolase family 74 (a GH74_Ace catalytic domain) enzyme, wherein said polypeptide was expressed in a heterologous host cell.
29. (Cancelled).

30. (Original) A fusion protein comprising the polypeptide of claim 28 and a heterologous peptide.
31. (Previously presented) The fusion protein of claim 30, wherein the heterologous peptide is a substrate targeting moiety and said substrate is a carbohydrate polymer.
32. (Original) The fusion protein of claim 30, wherein the heterologous peptide is a peptide tag.
33. (Previously presented) The fusion protein of claim 32, wherein the peptide tag is 6-His, thioredoxin, hemagglutinin, glutathione S-transferase, or OmpA signal sequence tag.
34. (Original) The fusion protein of claim 30, wherein the heterologous peptide is an agent that promotes polypeptide oligomerization.
35. (Original) The fusion protein of claim 34, wherein the agent is a leucine zipper.
36. (Previously presented) A cellulase-substrate complex comprising the polypeptide of claim 28 bound to cellulose.
- 37-42. (Cancelled).
43. (Currently amended) [[A]] The composition of claim 28 further comprising the polypeptide of claim 28 and a carrier.
- 44-47. (Cancelled).

48. (Currently amended) The composition of claim 1, wherein said polypeptide having
retains at least the same level of cellulase activity and thermal tolerability as those exhibited by
the peptide of SEQ ID NO: 1.

49-51. (Cancelled).

52. (Currently amended) A composition comprising a genetically engineered polypeptide
~~expressed in a heterologous host cell~~, said polypeptide having an amino acid sequence of
identical to SEQ ID NO: 1 from amino acid residue 1 to about amino acid residue 1000, wherein
said polypeptide was expressed in a heterologous host cell.

53. (Currently amended) A composition comprising a genetically engineered polypeptide
~~expressed in a heterologous host cell~~, said polypeptide having being characterized by a catalytic
domain of ~~a glycosyl hydrolase family 74 (GH74_Ace [()]) enzyme~~ and a carbohydrate binding
domain (CBD [()]) III, said catalytic domain of GH74_Ace having a sequence of ~~that is at least~~
90% identical to SEQ ID NO: 3, wherein said polypeptide was expressed in a heterologous host
cell.

54. (Currently amended) The composition of claim 53 wherein said catalytic domain of
GH74_Ace has a sequence of ~~identical to~~ SEQ ID NO: 3 from amino acid 1 to amino acid 740.

55-56. (Cancelled)

57. (Currently amended) A composition comprising a genetically engineered polypeptide
~~expressed in a heterologous host cell~~, said polypeptide having ~~a at least 90% identity to the~~
~~polypeptide sequence of SEQ ID NO: 4 and having carbohydrate binding activity~~, wherein said
polypeptide was expressed in a heterologous cell.

58. (Currently amended) A composition comprising a genetically engineered polypeptide
~~expressed in a heterologous host cell~~, said polypeptide having ~~a at least 90% identity to the~~

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polypeptide sequence of SEQ ID NO: 5 and having carbohydrate binding activity, wherein said polypeptide was expressed in a heterologous cell.

59. (Cancelled)